Agent's Docket No: **ONX-107A**

In the United States Patent and Trademark Office

#2

Application No.: 09/810,333
Filed: 3/14/2001
Title: Multi-layer, Self-Aligned Vertical CombDrive Electrostatic Actuators and Fabrication Methods
Applicants: Behrang Behin et al.
Examiner: Not Assigned
Art Unit 2831

Mailed 1/31/2002
Fremont, CA

Information Disclosure Statement

Commissioner of Patents and Trademarks
Washington, District of Columbia 20231

Dear Sir or Madam:

Attached is a completed Form PTO-1449 and copies of the pertinent parts of the references cited thereon. It is requested that the document(s) on the enclosed form be made of record.

Part I (Authority)

This statement is filed pursuant to:

(**X**) 37 C.F.R. § 1.97(b).
This information disclosure statement is filed either (1) within three months of the filing date of the national applications; (2) within three months of the date of entry of the national stage as set forth in 37 C.F.R. § 1.491 in an international application; (3) before the mailing date of a first office action on the merits; or (4) before the mailing of a first Office action after the filing of a request for continued examination under §1.114, whichever event occurs last.
Accordingly, this information disclosure statement requires no fee and no certification.

( ) 37 C.F.R. § 1.97(c).
This information disclosure statement is filed after the period specified in 37 C.F.R. § 1.97(b), but before the mailing date of either (1) a final action under 37 C.F.R. § 1.113 or (2) a notice of allowance under 37 C.F.R. § 1.311.
Accordingly, this information disclosure statement requires either the fee specified in 37 C.F.R. § 1.17(p) for submission of an information disclosure statement under 37 C.F.R. § 1.97(c) ($180), or a certification according to 37 C.F.R. § 1.97(e).

( ) 37 C.F.R. § 1.97(d).
This information disclosure statement is filed after the period specified in 37 C.F.R. § 1.97(c).
Accordingly, this information disclosure statement requires the petition fee specified in 37 C.F.R. § 1.17(p) to consider an information disclosure statement under 37 C.F.R. § 1.97(d) ($180) and a certification according to 37 C.F.R. § 1.97(e).

Conditional Petition

It is respectfully requested that this information disclosure statement be considered, good cause being presented in Part III herein (certification). Please treat this paper as the required petition.

If this statement crosses in the mail with an office action or is otherwise not in the indicated category of 37 C.F.R. § 1.97, it is respectfully requested that this statement be treated in the next appropriate category and made of record.

To the extent required, please treat this paper as a conditional petition for acceptance of the information disclosure statement.

Part II (Payment)

A check is enclosed as indicated:

(**X**) No fee is due.

( ) The fee specified in 37 C.F.R. § 1.17(p) for submission of an information disclosure statement under 37 C.F.R. § 1.97(c) is enclosed ($180).

( ) The petition fee specified in 37 C.F.R. § 1.17(p) to consider an information disclosure statement under 37 C.F.R. § 1.97(d) is enclosed ($180).

Part III (Certification)

Pursuant to 37 C.F.R. § 1.97(e), I certify:

(**X**) No certification is necessary.

( ) (1) Each item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the statement.

( ) The "communication from a foreign patent office" referred to in the certification is an International Search Report, possibly issued by the U.S. Patent and Trademark Office in its capacity as an International Search Authority or International Preliminary Examining Authority.

( ) The "counterpart foreign application" referred to in the certification corresponds to an ancestor or descendent application of the application for which this information disclosure statement is filed.

( ) (2) No item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, or, to my knowledge after making reasonable inquiry, was known to any individual designated in 37 C.F.R. § 1.56(c), more than three months prior to the filing of the statement.

Part IV (Additional Statement)

An additional statement regarding these items of information ( ) is, ( ) is not, enclosed.
Copies of the cited art ( ) are enclosed, ( ) are of record in parent application Serial No. _____ and will be provided if the Examiner deems it convenient.

Dated: 1/31/2002

Respectfully submitted,

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FORM PTO-1449 U.S. DEPARTMENT OF COMMERCE	AGENT DOCKET NO. **ONX-107A**	SERIAL NO. **09/810,333**
LIST OF PRIOR ART CITED BY APPLICANT (Use several sheets if necessary)	APPLICANT **Behrang Behin et al.**	
	FILING DATE **3/14/2001**	GROUP **2831**

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	A	5 7 2 3 3 5 3	3/3/1998	Muenzel et al.	437	51	2/12/1996
	B	5 7 2 6 0 7 3	3/10/1998	Zhang et al.	437	228	1/16/1996
	C	5 7 5 3 9 1 1	5/19/1998	Yasuda et al.	250	306	1/16/1997
	D	5 8 7 2 8 8 0	2/16/1999	Maynard	385	88	8/12/1996
	E	6 3 3 0 1 0 2	12/11/2001	Daneman et al.	359	290	3/25/2000
	F	5 9 5 9 7 6 0	9/28/1999	Yamada et al.	359	224	7/28/1998

FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
							YES	NO
	G	0 9 0 7 0 7 6 A 2	4/7/1999	Europe	G01N	27/00		
	H	0 9 0 7 0 7 6 A 3	10/4/2000	Europe	H01J	37/63		
	I	0 9 1 1 9 5 2 A 2	4/28/1999	Europe	H02N	1/00		
	J	0 9 1 1 9 5 2 A 3	4/5/2000	Europe	H02N	1/00		
	K	1 9 7 5 7 1 8 1 A	7/1/1997	Germany	G02B	6/35		X
	L	1 9 6 4 4 9 1 8 A	4/30/1998	Germany	G02B	6/35	X	
	M	2 9 6 1 1 8 8 1 8	12/12/1996	Germany	G02B	6/35		X
	N	2 7 3 2 4 6 7 A 1	4/10/1996	France	G01P	15/08		X

OTHER PRIOR ART (Including Author, Title, Date, Pertinent Pages, Etc.)

	O	"Electrostatic Comb Drive For Vertical Actuation" A.P. Lee et al., Proceedings of the SPIE, SPIE, Bellingham, VA, vol. 3224, Sept 29, 1997, pp 109-119
	P	"Design, Fabrication, Position Sensing, And Control Of An Electrostatically-Driven Polysilicon Microactuator," P. Cheung et al, IEEE Transactions on Magnetics, vol. 32, no. 1, 1 Jan. 1996, pp 122-128
	Q	"Optical Methods For Micromachine Monitoring And Feedback", F.M. Dickey et al., Sensors and Actuators, vol. 78, 1999, pp 220-235
	R	"A High Sensitivity Z-Axis Capacitive Silicon Microaccelerometer with a Torsional Suspension", Selvakumar et al., Journal of Microelectromechanical Systems, IEEE Inc., New York, vol. 7, No. 2, June 1998, pp 192-200
	S	"MEMS Fabrication of High Aspect Ratio Track-Following Micro Actuator for Hard Disk Drive Using Silicon On Insulator", B. H. Kim et al., Technical Digest of the IEEE International MEMS '99 Converence. 12th IEEE International Conference on Micro Electro Mechanical Systems. Orlando, FL, Jan 17-21, 1999, IEEE International Micro Electro Mechanical Systems Converence, New York, NY, 1999, pp 53-56.
	T	"Fabrication of Comb-Shaped Microactuator for Multi-Degrees-of-Freedom System", F. Fujikawa et al., Robotics, CIM and Automation, Emerging Technologies, San Diego, Nov. 9-13, 1992, Proceedings of the International Converence on Industrial Electronics, Control, Instrumentation and Automation (IECON), New York, NY, IEEE, US, vol. 2 Conf 18, 9 November 1992, pp 990-995

EXAMINER	**DATE CONSIDERED**

*** EXAMINER:** Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

			OTHER PRIOR ART (Including Author, Title, Date, Pertinent Pages, Etc.)
			Integrated Micro-Scanning Tunneling Microscope", Xu et al., Applied Physics Letters, American Institute of Physics, New York, vol. 67, No. 16, October 16, 1995 pp 2305-2307.
	V		B. Behin et al., US Published Patent Application US 2001/004874 A1, Serial No. 09/751,660 "Two-Dimensional Gimbaled Scanning Actuator with Vertical Electrostatic Comb-Drive for Actuation and/or Sensing" Filed Dec 28, 2000 (ONX-105)
	W		B. Behin et al., US Published Patent Application US-002001/050801-A1, Serial No. 09/810,336 "Biased Rotatable Combdrive Devices and Methods", Filed March 14, 2001, (ONX-106A)
	X		B. Behin et al., US Patent Application Serial No. 09/809,994 "Biased Rotatable Combdrive Actuator Methods" Filed March 14, 2001 (ONX-106B)
	Y		B. Behin et al., US Published Patent Application US-2001/0040419-A1, Serial No. 09/809,995 "Biased Rotatable Combdrive Sensor Methods", Filed March 14, 2001 (ONX-106C)
	Z		B. Behin et al., US Published Patent Application US-2002/0051014-A1 Serial No. 09/810,326 "Optical Switch Employing Biased Rotatable Combdrive Devices and Methods", Filed March 14, 2001 (ONX-106D)
	AA		B. Behin et al., US Patent Application US-2001/34938-A1, Serial No. 09/810,335 "Multi-Layer, Self-Aligned Vertical Combdrive Electrostatic Actuators And Fabrication Methods", Filed March 14, 2001 (ONX-107B)
	AB		"Vertical Comb Array MicroActuators", A. Selvakumar et al., Proceedings of the Workshop on Micro Elecrical Mechanical Systems (MEMS), Amsterdam, New York, Jan 29-Feb 2, 1995, IEEE Vol. Workshop 8 Jan. 29, 1995, pp 43-48, ISBN 0-7803-2504-4 ✓
	AC		"Fabrication of a 3D Differential-Capacitive Acceleration Sensor by UV-LIGA", W. Qu et al., Sensors and Actuators 77 (1999), pp 14-20, Elsevier Science, 0924-4247/99/$
	AD		"Integrating SCREAM Micromachined Devices with Integrated Circuits", K.A. Shaw, N.C MacDonald, IEEE MEMS '96, San Diego, California 1996, IEEE Publication 0-7803-2985-6/96, pp 44-48
	AE		"An electrostatically excited 2D-Micro-Scanning-Mirror with an in-plane configuration of the driving electrodes", H. Schenk et al., MEMS 2000, 13th Int. Micro Electro Mechanical Systems Conf, Miyazaki, Japan, p. 473-478 (2000).
	AF		"Damping of Micro Electrostatic Torsion Mirror Caused by Air-Film Viscosity", N. Uchida et al.
	AG		"Single Crystal Silicon (SCS) MicroMirror Arrays using Deep Silicon Etching and IR Alignment", C.S.B. Lee et al.

EXAMINER	DATE CONSIDERED

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